

# Otitis Media

## What It Is, What Causes It, Its Effects, and Treatment

### What it is:

Otitis media is one of the most common problems for which a child is seen by a physician. It is an inflammation of the middle ear space and is usually accompanied by fluid build-up. This fluid may or may not be infected. This build up of fluid in the middle ear space restricts the movement of the ear drum. If the ear drum does not move freely, a hearing loss occurs. This can be compared to plugging your ear with your finger. The child with otitis media does not always show signs such as fever, irritability, tender ears, reddened ears, etc.

There are three general categories of otitis media: 1. otitis media without effusion (fluid); 2. otitis media with effusion; 3. otitis media with perforation (hole in ear drum).

### What causes it:

The eustachian tube is the tube connecting the middle ear and the upper part of the nasal passages. Eustachian tube dysfunction is a significant factor in the development of otitis media. The purpose of the Eustachian tube is to equalize the pressure on both sides of the ear drum and provide ventilation to the middle ear space. When it does not work properly, the air is trapped in the middle ear space. This air is absorbed and fluid results.

Age plays a factor in the development of otitis media. At birth, the eustachian tube is in a horizontal position and it is wider and shorter. During the first few years of life it begins to extend downward allowing for easier drainage. Therefore, otitis media is most common during the first 2 years of life. Inflammation of the nasal end of the eustachian tube may produce swelling, thus impairing its function. Such inflammation may result from viral or bacterial infection (a cold) or chemical irritation (tobacco smoke, chlorinated pool water).

Allergies have also been known to cause otitis media. Some foods that commonly cause allergic reactions in young children include milk, wheat, eggs, corn, yeast, peanuts, soybean, sugar and citrus. Skeletal changes play an important part in the development of otitis media. Children with Down syndrome, cranial base anomalies (cleft palate, atresia, adenoid problems, etc.) and craniofacial syndromes (Treacher-Collins, Crouzon's or CHARGE) have a high incidence of otitis media. Children with upper respiratory problems are also more prone to develop otitis media. Family history, climate, and dietary reasons have also been linked to recurring otitis media.

### What the effects are:

Recurring otitis media has been shown to have a direct impact on a child's speech, language, and academic development. If a hearing loss is present due to otitis media, a child will experience difficulties in attending and following both formal communication (classroom instruction), and incidental communication (conversation that is on-going throughout the day).

Amplification is not prescribed for the child with otitis media because in the majority of cases, the child's hearing returns to normal after the otitis media is cleared. However, more severe cases, especially when prolonged or left untreated, may result in a perforated ear drum, scar tissue on the ear drum and even a permanent hearing loss. Other, more serious, complications that could occur include facial nerve paralysis, meningitis, encephalitis or brain abscess.

Children that have a known sensorineural hearing loss may experience a decrease in their usable hearing and in some cases, these children may not be able to wear their hearing aids during an episode of otitis media. The ear must be allowed to breathe and drain. If an earmold or hearing aid is in the ear, increased condensation may occur or the fluid may drain into the hearing aid causing internal damage to the amplifier. Some children may experience such pain that they cannot tolerate the earmold or hearing aid in their ear.

## **Treatment:**

Treatment for otitis media varies according to the severity, the occurrence, and the age of the child. If the otitis media is found to be infectious, antibiotics are usually recommended. Clearance of the liquid is imperative. If the child has a history of recurring otitis media the doctor may choose to perform a myringotomy and place a tympanostomy tube in the ear drum. This is a common procedure in young children which entails the doctor making an incision in the ear drum to drain the fluid. A small tube is then placed in the incision. This tube allows for the air pressure to be equalized on both sides. It also assists in keeping the middle ear space well ventilated.

**IF YOU SUSPECT YOUR CHILD MAY BE PRONE TO OTITIS MEDIA, CONSULT YOUR PHYSICIAN, PEDIATRICIAN, OR EAR, NOSE AND THROAT SPECIALIST (ENT). CDBS IS ALWAYS HERE TO ANSWER YOUR QUESTIONS.**

## **Glossary:**

**effusion** - The escape of fluid into the middle ear cavity.

**perforation** - A hole or tear.

**cranial base anomalies** - Pertaining to or involving both the braincase and face.

**cleft palate** - Nonclosure of all or part of the roof of the mouth.

**atresia** - Absence of the ear canal.

**myringotomy** - A small cut in the ear drum.

**facial paralysis** - A paralyzed face muscles.

**meningitis** - Inflammation of the membranes covering the brain and spinal cord.

**encephalitis** - Inflammation of the brain.

**brain abscess** - A collection of puss surrounded by inflamed tissue on the brain.

**tympanostomy tube** - A small tube that is placed in the ear drum to allow air to enter the middle ear.

Fact sheets from California Deaf-Blind Services are to be used by both families and professionals serving individuals who are deaf-blind. The information applies to students 0-22 years of age. The purpose of the fact sheet is to give general information on a specific topic. More specific information for an individual student can be provided through individualized technical assistance available from CDBS. The fact sheet is a starting point for further information.

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